

Appl. No. 09/974,775  
Amdt. dated December 23, 2003  
Reply to Office Action of October 24, 2003

### REMARKS/ARGUMENTS

In the Final Office Action mailed October 24, 2003, the drawings and claims 1-21 were examined. The drawings were objected to under 37 C.F.R. 1.83(a), for not showing every feature of the invention specified in the claims. Claims 1-14 were rejected under 35 U.S.C. § 103(a), as allegedly obvious over U.S. Patent No. 3,992,014 to Retford ("the Retford patent") in view of U.S. Patent No. 4,424,307 to DiEdwardo et al. ("the DiEdwardo patent").

Applicant acknowledges with appreciation the allowability of claims 15-21 if rewritten to include all of the limitations of the base claim and any intervening claims.

Applicant respectfully traverses the rejections of the claims, for the reasons set forth below.

#### The Invention

Before addressing the specific claim rejections, it will be helpful first to briefly summarize the invention of the pending claims.

The invention is embodied in a golf ball comprising a syndiotactic 1,2-polybutadiene having a crystallinity between about 5% and about 50%, a mean molecular weight between about 10,000 and about 350,000, and a percentage of 1,2-bonds greater than about 70%. Preferably, the golf ball comprises a syndiotactic 1,2-polybutadiene having a crystallinity between about 10% and about 40%, and more preferably between about 15% and about 30%. Preferably, the golf ball comprises a syndiotactic 1,2-polybutadiene having a mean molecular weight between about 50,000 and about 300,000, more preferably between about 80,000 and about 200,000, and most preferably between about 100,000 and about 150,000. Preferably, the golf ball comprises a syndiotactic 1,2-polybutadiene having a percentage of 1,2-bonds greater than about 80%, and more preferably greater than about 90%. The golf ball can

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further comprise UV stabilizers, photostabilizers, photoinitiators, co-initiators, antioxidants, colorants, dispersants, mold releasing agents, processing aids, inorganic fillers, organic fillers, or mixtures thereof.

The present invention also is embodied in a golf ball composition comprising a syndiotactic 1,2-polybutadiene having a crystallinity between about 5% and about 50%, a mean molecular weight between about 10,000 and about 350,000, and a percentage of 1,2-bonds of greater than about 70 %, and ionomeric polymers, non-ionomeric polymers, or mixtures thereof, wherein the ratio by weight of syndiotactic 1,2-polybutadiene to the ionomeric polymers and non-ionomeric polymers ranges between about 5:90 and about 90:5. More preferably, the ratio by weight of syndiotactic 1,2-polybutadiene to the ionomeric polymers and non-ionomeric polymers ranges between about 10:90 and about 80:20, most preferably about 10:90 and about 70:30. The ionomeric polymers can comprise copolymeric polymers, terpolymeric polymers, or mixtures thereof.

The composition can further comprise a crosslinking agent, co-crosslinking agent, crosslinking accelerator, or mixtures thereof. When the composition comprises a crosslinking agent, the ratio by weight of crosslinking agent to syndiotactic 1,2-polybutadiene, ionomeric polymers and non-ionomeric polymers preferably ranges between about 0.1:100 and about 10:100, and more preferably between about 0.1:100 and about 5:100. When the composition comprises crosslinking accelerator, co-crosslinking agent, or mixtures thereof, the ratio by weight of crosslinking accelerator and co-crosslinking agent to syndiotactic 1,2-polybutadiene, ionomeric polymers and non-ionomeric polymers preferably ranges between about 0.1:100 and about 20:100, and more preferably between about 0.1:100 and about 10:100.

The golf ball composition preferably can comprise a copolymer having a glycidyl group, hydroxyl group, maleic anhydride group or carboxylic group. When the composition comprises such a copolymer, the ratio by weight of the copolymer to the syndiotactic

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1,2-polybutadiene, ionomeric polymers and non-ionomeric polymers preferably ranges between about 1:100 and about 20:100, and more preferably between about 1:100 and about 15:100.

**The Objection to The Drawings Under 37 C.F.R. 1.83(a)**

On page 2 of the Office Action, the drawings were objected to under 37 C.F.R. 1.83(a). In particular, the Examiner stated as follows:

The drawings must show every feature of the invention specified in the claims. Therefore, the golf ball must be shown or the feature(s) canceled from the claim(s) . . . A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

In the Amendment submitted for filing with the U.S. Patent and Trademark Office on July 29, 2003, Applicant submitted FIGS. 2a-c, which illustrate the golf ball discussed in the specification and claims of the instant application, and amended the specification to include references to FIGS. 2a-c. No new matter was added. Enclosed with this Amendment is a copy of the previously submitted FIGS. 2a-c. Thus, Applicant respectfully requests withdrawal of the objection to the drawings.

**The Rejection of Claims Under 35 U.S.C. § 103**

On pages 2 and 3 of the Office Action, independent claims 1 and 10, and dependent claims 2-9 and 11-14, were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over the Retford patent in view of the DiEdwardo patent. Applicant respectfully traverses this rejection.

Regarding the Retford and DiEdwardo patents, the Examiner on pages 2 and 3 of the Office Action stated as follows:

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Retford discloses a golf ball comprising a (sic) at least 60% cis-polybutadiene and the remainder 1,2-polybutadiene. Retford does not disclose properties of the composition. However, DiEdwardo teaches a syndiotactic 1,2-polybutadiene with more than 90% 1,2 units, an average molecular weight of more than 100,000 and a crystallinity from 15 to 25% (col 5, line 10; col 6, lines 54-59) . . . DiEdwardo also teaches an oxymethylene polymer is included in the composition (abstract). The ratio of the 1,2 polybutadiene and the polymer is from 1:99 to 20:80 (col 9, lines 35-42).

Applicant submits that it would not have been obvious to one of ordinary skill in the art at the time the invention was made to combine and modify the teachings of the Retford and DiEdwardo patents to result in the claimed invention of the instant application. The Retford patent discloses a golf ball preferably having at least about 60% cis-polybutadiene (known to one of ordinary skill in the art as 1,4-polybutadiene), and mentions the 1,2-polybutadiene as only an unintended fraction of the golf ball (see column 2, lines 22-25, and column 3, lines 20-31, of the Retford patent). Also, while the Retford patent mentions 1,2-polybutadiene, it makes *no* mention of the syndiotactic form required by independent claims 1 and 10. One of ordinary skill in the art understands that the form of the 1,2-polybutadiene mentioned in the Retford patent is the atactic (random) form, and *not* the syndiotactic form.

Furthermore, the DiEdwardo patent *fails* to mention sporting goods (as noted by the Examiner on page 4 of the Office Action), much less, the use of syndiotactic 1,2-polybutadiene in golf balls. Thus, the Examiner has *failed* to present any evidence that one of ordinary skill in the art *would have been led* to combine the relevant teaching in Applicant's proposed manner *to arrive at the claimed invention*. Since no motivation has been set forth to combine and modify the teachings of the Retford and DiEdwardo patents, it appears that the Examiner's obviousness conclusion is based on the Applicant's specification (hindsight

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reconstruction). For this reason, the § 103 rejection of independent claims 1 and 10, and dependent claims 2-9 and 11-14, is improper and should be withdrawn.

**Allowable Subject Matter**

On page 3 of the Office Action, the Examiner indicated that claims 15-21 "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." Applicant has amended claims 15 and 17 so they are written in independent form, including all of the limitations of base independent claim 10 and intervening dependent claim 14. Also, Applicant has amended claim 19 so it is written in independent form, including all of the limitations of base independent claim 10. Dependent claims 16, 18, and 20 directly depend from amended independent claims 15, 17, and 19, respectively, and claim 21 depends from dependent claim 20. Accordingly, Applicant believes claims 15-21 to be allowable, and respectfully request removal of the objection to these claims. Furthermore, Applicant believes new independent claim 40 to be allowable because it includes all of the limitations of allowable independent claim 15.

**Conclusion**

This application should now be in condition for a favorable action. Applicant respectfully requests entry of the Amendment and an early allowance of all claims herein. If for any reason the Examiner finds the application other than in allowance, the Examiner is requested to call the undersigned attorney at below-listed telephone number to discuss the steps

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necessary for placing the application in condition for allowance. If there are any fees due in connection with the filing of this amendment, please charge the fees to our Deposit Account No. 19-1853.

Respectfully submitted,

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Enclosure